

**DRAFT FOR PUBLIC HEARING
State Implementation Plan Revision**

**Limited Maintenance Plans for the Hartford, the
New Haven, and the Connecticut Portion of the New
York/New Jersey/Connecticut
Carbon Monoxide Maintenance Areas**

May 11, 2004

DRAFT 05/06/04

Robert W. Varney
Regional Administrator
United States Environmental Protection Agency
Region I, EPA New England
One Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

***Re: Connecticut State Implementation Plan Revision--
Limited Maintenance Plans for the Hartford, the New Haven and the
Connecticut Portion of the New York/New Jersey/Connecticut Carbon Monoxide
Maintenance Areas***

Dear Mr. Varney:

Pursuant to 40 CFR 51, Appendix V, Section 2.1(a), I am pleased to submit, on behalf of the Connecticut Department of Environmental Protection, an original and five copies of the enclosed proposed revision to the Connecticut State Implementation Plan ("SIP") for air quality to address attainment planning required by the Clean Air Act (the "Act") for Connecticut's three carbon monoxide ("CO") attainment/maintenance areas: Hartford-New Britain-Middletown ("Hartford"); New Haven-Meriden-Waterbury ("New Haven"); and the Connecticut Portion of the New York-Northern New Jersey-Long Island ("Southwest Connecticut") area.

Pursuant to Section 175A of the Act, EPA approved initial 10-year full maintenance plans for each of the three CO areas when EPA redesignated each area as in attainment. These initial 10-year maintenance plans cover the period through 2005 for the Hartford area, 2008 for the New Haven area and 2010 for the Southwest Connecticut area. Given the termination of the initial maintenance period for the Hartford CO area in 2005, the need to establish maintenance plans for the second 10-year period for each of the three areas and the significant decreases in ambient CO concentrations monitored throughout Connecticut, EPA recommended that Connecticut consider adoption of limited maintenance plans ("LMPs") to replace the remainder of the initial 10-year full maintenance plans and cover the second 10-year maintenance plan requirement.

Acting upon EPA's recommendation, I request that EPA approve the enclosed LMPs for the Hartford, New Haven and Southwest Connecticut CO maintenance areas to serve two purposes:

- 1) to replace the remainder of the first 10-year maintenance period for each of the three areas and
- 2) to satisfy the requirement to submit a plan for approval for the second 10-year period for each of the three areas. This submission package includes all elements necessary to satisfy 40 CFR 51, Appendix V, Section 2.

Please contact David Wackter of the Department of Environmental Protection at (860) 424-3027

Robert W. Varney
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if any further information will assist in the approval of this SIP submittal. Thank you for your consideration in this matter.

Sincerely,

Arthur J. Rocque, Jr.
Commissioner

AJR/MAG/mag

Enclosures

cc: Tim Williamson, EPA New England, Acting Air Quality Unit Manager
David Conroy, EPA New England, Acting Air Program Manager
Donald Cooke, EPA New England, Air Quality Unit



**STATE OF CONNECTICUT
DEPARTMENT OF
ENVIRONMENTAL PROTECTION
79 Elm Street
Hartford, CT 06106-5127**

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Carbon Monoxide Maintenance Areas**

May 11, 2004

**Connecticut Department of Environmental Protection
Bureau of Air Management**

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1.0 INTRODUCTION

Carbon monoxide (CO) is a colorless, odorless gas emitted as a product of incomplete oxidation from combustion sources. Motor vehicles are the primary source of CO emissions, with additional contributions from sources such as residential and commercial boilers, off-road engines, and power plants. During the winter, on-road motor vehicles emit over 60 percent of CO emissions in Connecticut. The influence of motor vehicles on ambient CO concentrations is dominant because vehicle emissions are released near ground level, often in areas where the public can be directly exposed. In Connecticut, maximum CO concentrations typically occur during winter in urban areas near high volume, congested intersections, where CO emissions are greatest due to the large number of vehicles idling or traveling at reduced speeds.

The acute health effects of CO are fairly well understood. When inhaled, CO is preferentially absorbed by the body's red blood cells in place of oxygen. The initial symptoms of CO poisoning include impaired perception, slowed reflexes, and drowsiness. Lack of oxygen places a greater burden on the heart due to an increase in the pulmonary rate. Exposure to very high levels of CO (not typically found in ambient air) can result in death due to hypoxia. To minimize health impacts, the United States Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for CO at 35 parts per million (ppm) averaged over a 1-hour period and 9 ppm averaged over an 8-hour period.

1.1 Clean Air Act Designations for Carbon Monoxide

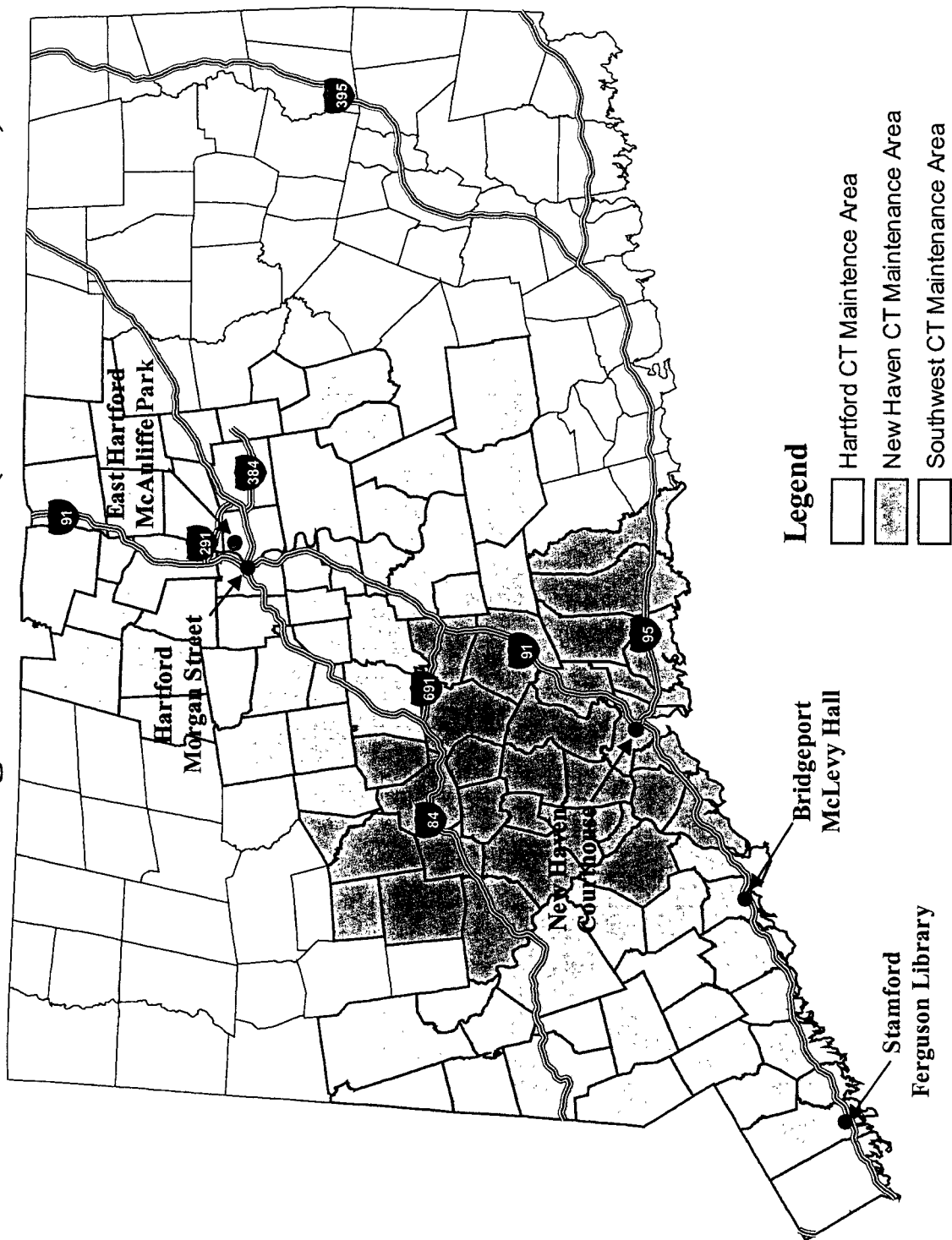
Violations of the 8-hour CO NAAQS were common in some urban areas of Connecticut (and elsewhere) throughout the 1970's and into the 1980's. As a result, much of central and southwest Connecticut was designated nonattainment for CO in the mid-1970's. Shortly after the Clean Air Act (CAA) was amended in 1990, EPA redefined the geographic boundaries and designated three 8-hour CO nonattainment areas in Connecticut:

- 1) Hartford-New Britain-Middletown (Hartford) Nonattainment Area
- 2) New Haven-Meriden-Waterbury (New Haven) Nonattainment Area
- 3) Connecticut Portion of the New York-Northern New Jersey-Long Island (Southwest Connecticut) Nonattainment Area

Figure 1 depicts the towns that were included in each of Connecticut's three CO nonattainment areas, along with the location of CO monitoring stations operating as part of the Connecticut Department of Environmental Protection's (CTDEP's) ambient monitoring network as of the end of 2003.

Note that there have been no measured exceedances of the 1-hour CO NAAQS (35 ppm) in Connecticut for more than two decades. As a result, all areas in Connecticut are in attainment with respect to the 1-hour CO NAAQS. EPA's 1990 CAA nonattainment designations for Connecticut were restricted to the 8-hour NAAQS; therefore, the analysis and discussion presented in this technical support document addresses the 8-hour NAAQS only.

Figure 1
CO Monitoring Sites in CT (December 2003)



1.2 Previous State Implementation Plan Revisions

The CAA requires states with nonattainment areas to develop emission reduction plans to achieve compliance with the CO NAAQS by certain mandated dates. Connecticut's plans included a combination of federal controls (e.g., more restrictive new-vehicle emission standards, cleaner burning gasoline) and state programs (e.g., vehicle emissions testing) that have successfully reduced CO emissions to the point where 8-hour CO design values¹ are significantly less than the NAAQS. As a result, all of Connecticut is now classified by the EPA as "attainment" for the CO NAAQS.

Connecticut's CO planning efforts over the last decade included preparing an attainment demonstration plan for the Southwest Connecticut nonattainment area and the adoption of various CO emission control programs. Resulting air quality improvements enabled the State to receive EPA approval of redesignation requests and maintenance plans for all three of Connecticut's CO areas. Table 1 lists the various State Implementation Plan (SIP) revisions prepared by the Connecticut Department of Environmental Protection (CTDEP) over the last decade to achieve and maintain statewide compliance with the CO NAAQS. Also listed are the current and proposed new 10-year maintenance periods for each of Connecticut's CO areas.

Table 1
Connecticut CO SIP Revisions

SIP Revision	EPA Approval/Effective Date	Initial Maintenance Period	Proposed Next Maintenance Period
Southwest Connecticut Attainment Demonstration	August 26, 1996	NA	NA
Hartford Area Redesignation and Maintenance Plan	January 2, 1996	1995-2005	2005-2015
New Haven Area Redesignation and Maintenance Plan	December 4, 1998	1998-2008	2008-2018
Southwest Connecticut Redesignation and Maintenance Plan	May 10, 1999	2000-2010	2010-2020

Section 175A of the CAA specifies that an area that comes into compliance with a NAAQS cannot be redesignated to attainment unless a maintenance plan has been approved by EPA. Maintenance plans are required for two, sequential, 10-year periods after redesignation. As indicated in Table 1, Connecticut's maintenance plans for the first 10-year period were previously approved by EPA and

¹ An area's CO design value for a given year is determined as follows:

- 1) Identify the 2nd highest non-overlapping 8-hour concentration at a monitor for each of the two most recent consecutive calendar years.
- 2) Select the higher of those two values as the design value for that monitor.
- 3) Repeat the above procedure for each monitor in the area. The highest design value at any monitor is the design value for that area.

An area is in compliance with the 8-hour CO NAAQS when the area's measured Design value is less than 9.5 ppm. For more details, see the June 19, 1990 memorandum "Ozone and Carbon Monoxide Design Value Calculations" from William Laxton (EPA OAQPS) to the Regional Air Directors:

<http://www.epa.gov/air/oaqps/greenbk/laxton.html>

are currently being implemented in each of Connecticut's CO areas. These initial 10-year maintenance plans cover the period through 2005 for the Hartford area, 2008 for the New Haven area, and 2010 for the Southwest Connecticut area. All of these initial 10-year plans are "full" maintenance plans, meeting all EPA requirements (including establishing CO budgets for transportation conformity), as specified by guidance² issued in 1992.

1.3 Description of Current Limited Maintenance Plan SIP Revision

Prompted by the impending end of the initial maintenance period for the Hartford CO area in 2005, CTDEP and EPA Region 1 staff discussed options for establishing maintenance plans for the second 10-year period for each of Connecticut's CO areas. In light of significant decreases in ambient CO levels monitored throughout Connecticut, EPA recommended that CTDEP consider adoption of "limited" maintenance plans for each area that would cover the remainder of the initial 10-year maintenance period as well as the second 10-year period. (See Table 1 for the years covered by each period). As discussed below, Connecticut has elected to pursue the limited maintenance plan option suggested by EPA.

EPA issued guidance³ in 1995 describing the eligibility criteria and planning requirements for limited maintenance plans (LMP's). EPA Region 1 provided supplemental information⁴ specific to Connecticut in a letter dated March 12, 2004. (Both of these documents are included in Appendix A.) Areas are eligible for limited maintenance plans only if current CO design values are at or below 7.65 ppm (i.e., set at 85% of the 8-hour NAAQS of 9 ppm). In addition to an analysis of monitoring data to demonstrate eligibility, approvable LMP's must contain the following planning elements:

- 1) *Attainment Inventory*: Identify a level of emissions sufficient to attain the NAAQS.
- 2) *Maintenance Demonstration*: In addition to demonstrating that design values do not exceed 85% of the NAAQS, EPA Region 1 has recommended that CTDEP provide projected inventories for 2015 and 2020 to verify that emissions at the end of the second 10-year maintenance periods will not exceed the attainment inventory.
- 3) *SIP Commitments*: Commit to a) maintain a monitoring network to verify attainment through the maintenance period; b) continue to perform project level transportation conformity reviews (areawide emission "budget tests" are not required for limited maintenance plans); and c) submit a full maintenance plan if future design values in an area exceed 7.65 ppm.
- 4) *Contingency Plan*: Document the measures to be promptly adopted and implemented if a violation (or exceedance) of the NAAQS occurs during the maintenance period.

² "Procedures for Processing Requests to Redesignate Areas to Attainment"; memorandum from John Calcagni (EPA OAQPS) to Regional Air Division Directors; September 4, 1992.

³ "Limited Maintenance Plan Option for Non-Classifiable CO Nonattainment Areas"; memorandum from Joseph Paisie (USEPA OAQPS) to Regional Air Branch Chiefs; October 6, 1995.

⁴ "Carbon Monoxide Limited Maintenance Areas for the Hartford-New Britain-Middletown, the New Haven-Meriden-Waterbury, and the Connecticut Portion of the New York-Northern New Jersey-Long Island Carbon Monoxide Attainment/Maintenance Areas"; letter from Tim Williamson (EPA Region 1) to Anne Gobin (CTDEP); March 12, 2004.

Section 2 provides an analysis of 8-hour design value trends for each of Connecticut's CO monitors and documents that current design values do not exceed 85% of the NAAQS. Section 3 presents a demonstration that emissions through the end of the second 10-year maintenance periods will not exceed those of a representative attainment year. Required SIP commitments are described in Section 4, while Connecticut's contingency plans are presented in Section 5.

EPA guidance materials are compiled in Appendix A. Technical documentation referenced in this narrative is contained in Appendices B, C, and D. All records related to the public notice and public hearing for this SIP revision (required under 40 CFR 51, Appendix V) are included in Appendix E.

2.0 ANALYSIS OF MONITORING DATA

As of the end of 2003, the CTDEP's ambient CO monitoring included five sites (see Figure 1): two sites located in the Hartford CO maintenance area (i.e., Morgan Street in downtown Hartford and McAuliffe Park in suburban East Hartford, which recently replaced the former Flatbush Avenue neighborhood site in Hartford); two sites in the Southwest Connecticut maintenance area (McLevy Hall in downtown Bridgeport and at the public library in downtown Stamford); and one site in the New Haven maintenance area (at the Superior Court building in downtown New Haven). CTDEP operates all CO monitors in accordance with EPA procedures specified in 40 CFR Part 58. Note that the Bridgeport McLevy Hall site was shut down at the end of 2003 to enable reallocation of limited monitoring resources to other pollutants. Peak CO concentrations measured at that site have consistently been lower than those measured at the other site in Southwest Connecticut (i.e., Stamford Library).

2.1 Design Value Trends

Ambient CO levels have dropped dramatically over the last three decades due to requirements for lower emitting motor vehicles, cleaner burning fuels, and vehicle emission testing. Figures 2 through 4 depict the decline in second-highest measured 8-hour CO levels at each monitor for the Hartford, Southwest Connecticut, and New Haven areas, respectively (also see Appendix B). In each case, measured CO levels have declined significantly over the period. Design values regularly exceeded the 8-hour CO NAAQS from the 1970's into the 1980's, while recent levels have been well below both the 9 ppm NAAQS and the LMP eligibility level of 7.65 ppm. Note that NAAQS compliance is achieved when the second-highest value measured at each monitor in an area does not exceed the NAAQS for two consecutive calendar years. All monitors have recorded continued compliance with the CO NAAQS for at least 15 years, demonstrating the effectiveness of federal and state control programs.

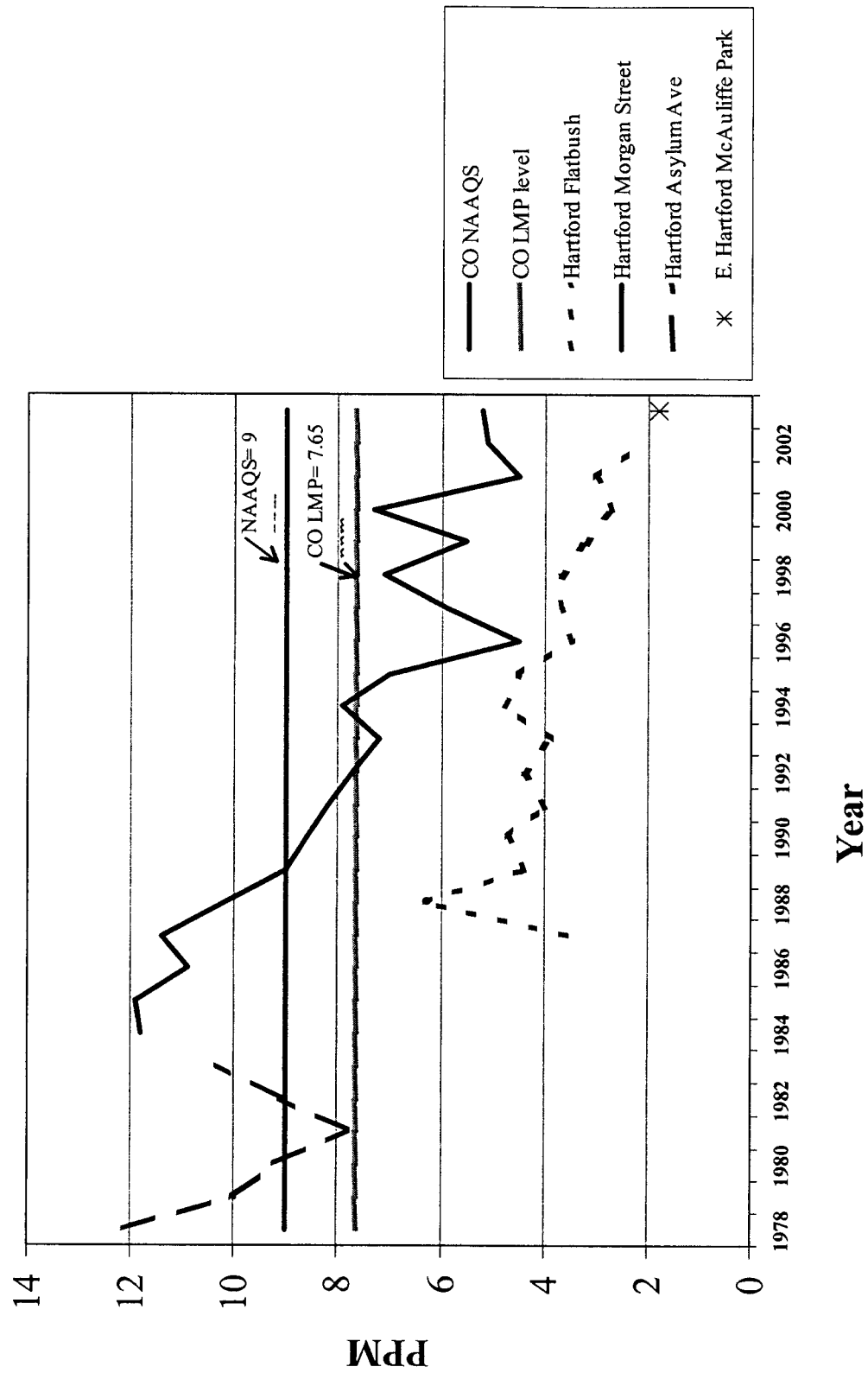
2.2 Current Design Values

Current (i.e., 2003) 8-hour design values for each of Connecticut's CO maintenance areas are summarized in Table 2. Also listed are 2003 design values for the New York and New Jersey portions of the metropolitan New York City CO maintenance area. In all cases, current design values are significantly less than the 7.65 ppm threshold specified in EPA guidance, thus making each area eligible for the limited maintenance plan option.

Table 2
Current Design Values for Connecticut's CO Maintenance Areas

CO Maintenance Area	2003 8-Hour CO Design Value (ppm)
Metropolitan New York City Maintenance Area:	
Southwest CT Portion	3.2
New York Portion	3.4
New Jersey Portion	4.4
Hartford Maintenance Area	5.2
New Haven Maintenance Area	2.3

Figure 2: Hartford Area
2nd Highest 8-hr CO Concentrations



**Figure 3: SW Connecticut Area
2nd Highest 8-hr CO Concentrations**

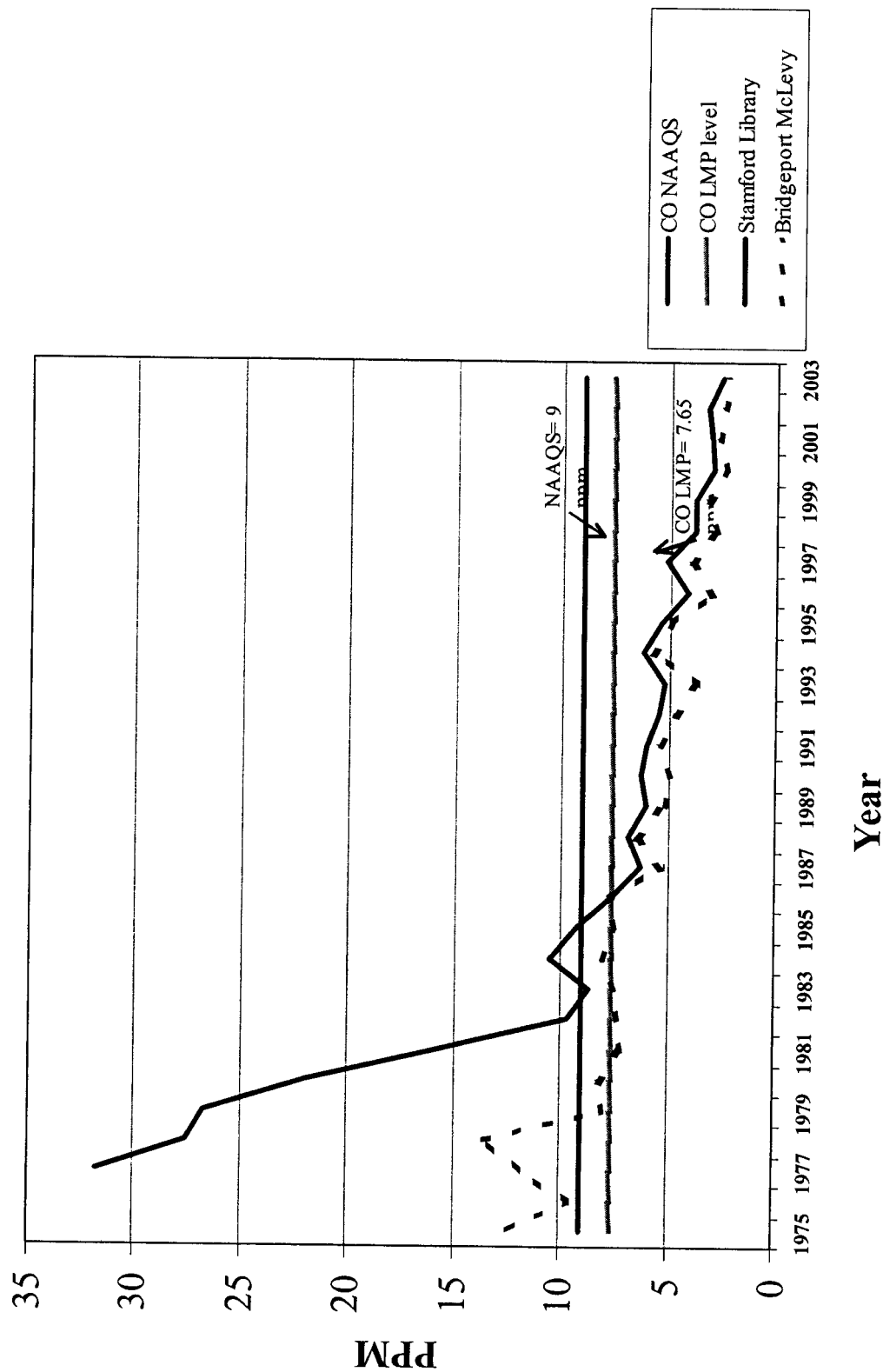
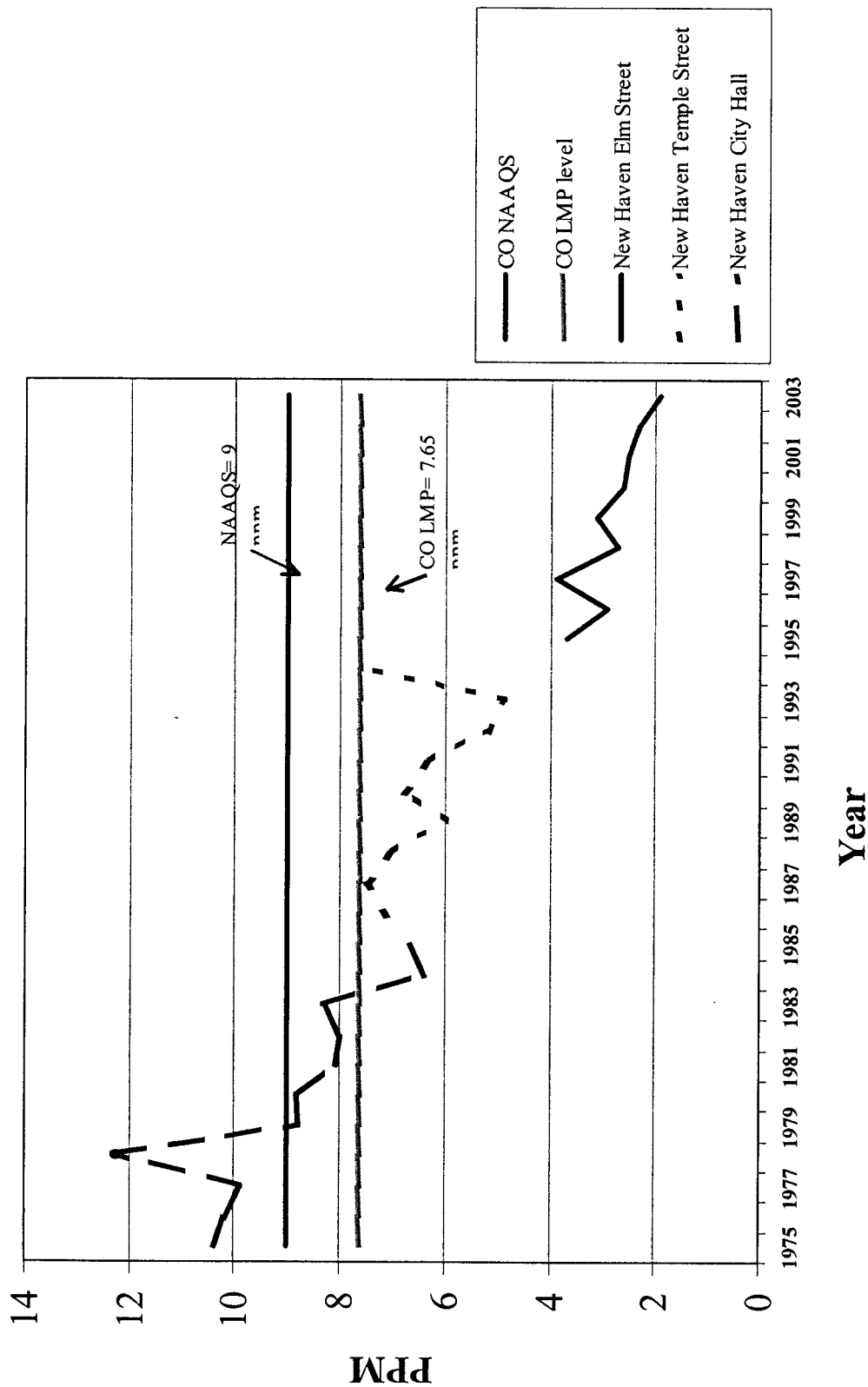


Figure 4: New Haven Area
2nd Highest 8-hr CO Concentrations



3.0 ANALYSIS OF ESTIMATED EMISSIONS

EPA's LMP guidance requires states to develop an attainment emissions inventory identifying a level of emissions sufficient to attain the NAAQS. The inventory should represent "typical winter-day" emissions during a time period coincident with monitored data showing attainment. Although not required by EPA's limited maintenance plan guidance, EPA Region 1 suggested that emission projections be developed for the end of the new 10-year maintenance periods to confirm the LMP assumption that any growth during the maintenance period will not lead to emissions increases that could jeopardize attainment.

All monitors in Connecticut have measured continued compliance with the CO NAAQS since at least 1990, when the Hartford area first attained the standard. Therefore, the LMP attainment inventory could be established using any year from 1990 onward. Consistent with EPA Region 1's recommendation, Connecticut has elected to use 2002 statewide emission estimates for the CO attainment inventory. Use of 2002 as the attainment inventory is conservative because design values for that year in each area are not only well below the 8-hour NAAQS of 9 ppm, but also significantly less than the LMP eligibility threshold of 7.65 ppm (see Figures 2 through 4). Emission estimates for 2015 and 2020 will be used to represent projected emissions for the end of the earliest (i.e., Hartford area) and latest (i.e., Southwest Connecticut) maintenance periods, respectively.

3.1 Methodologies

Statewide winter-day CO emission estimates were developed for 2002, 2015, and 2020, accounting for emissions from the various point, area, and non-road and highway categories. Point, area, and certain non-road source emissions (i.e., rail, aircraft, and commercial marine vessels) were estimated by applying population growth factors⁵ to 1999 emission estimates contained in Connecticut's 1999 periodic inventory. Estimates for highway sources and the remaining non-road categories were developed using EPA's recent versions of the MOBILE6.2 model (dated September 24, 2003) and the draft NONROAD model (version 2002a dated June 2003). Connecticut-specific inputs for each model, including growth in highway vehicle miles traveled (VMT), are documented in Appendix C and Appendix D, respectively. Note that MOBILE6.2 inputs for 2015 and 2020 do not include reformulated gasoline (i.e., oxygenate effects are not modeled), vehicle emission testing, or the proposed adoption of California low emission vehicle program. Similarly, NONROAD model estimates for 2015 and 2020 do not include the oxygenate effects of reformulated gasoline or EPA's proposed new emission and fuel standards for non-road sources. As a result, 2015 and 2020 emission estimates are conservatively high, and provide a degree of flexibility for future SIP program planning.

⁵ Relative to 1999 population estimates, Connecticut's Office of Policy and Management projects 0.7%, 6.1% and 8.6% increases in statewide population in 2002, 2015 and 2020, respectively (see <http://www.opm.state.ct.us/pdpd3/data/project.htm>).

3.2 Projected Emission Trends: 2002 through 2020

Resulting statewide CO emission estimates for 2002, 2015, and 2020 are compared in Table 3. Although emissions growth is projected for the point, area, and non-road sectors, reductions expected in the highway source sector are significant enough to result in declining total CO emissions over the 2002 to 2020 period (even when excluding the reductions associated with the reformulated gasoline and vehicle emissions testing program). Declining CO emission estimates through the end of the next maintenance period further justify CTDEP's request for approval of limited maintenance plans for each area.

Table 3
Estimated Statewide Winter-Day CO Emission Levels in 2002, 2015, and 2020

Source Category	2002 (tons/day)	2015* (tons/day)	2020* (tons/day)
Point	20.8	21.9	22.4
Area	817.9	861.3	881.3
Non-road	422.2	596.8	640.2
Highway	1871.3	1263.4	1196.1
Total	3132	2743	2740

* Highway emission projections for 2015 and 2020 do not include emission reductions from reformulated gasoline, vehicle emission testing, or the proposed adoption of California low emission vehicle standards. Non-road emission projections for 2015 and 2020 do not include the benefits of EPA's proposed non-road emission standards.

4.0 CTDEP SIP COMMITMENTS

EPA's guidance for limited maintenance plans also requires states to include several commitments as part of the SIP revision. To fulfill those requirements, CTDEP provides the following commitments, which will be in effect through the end of each area's second 10-year maintenance period (see Table 1).

4.1 Ambient Monitoring

- 1) CTDEP will maintain a continuous CO monitoring network, meeting the requirements of 40 CFR Part 58, that provides adequate coverage to verify continued compliance with the CO NAAQS in each CO maintenance area.
- 2) CTDEP will use data from the monitoring network to track whether design values exceed the eligibility requirement of 7.65 ppm for limited maintenance plan areas. If design values in any maintenance area exceed 7.65 ppm, CTDEP will coordinate with EPA to:
a) verify the validity of the data; b) evaluate whether the data should be excluded based on an "exceptional event"; and, if warranted based on the data review, c) develop a full maintenance plan for the affected maintenance area(s).

4.2 Transportation Conformity

EPA discusses the implications of limited maintenance plans on federal conformity requirements in an August 21, 2001 guidance memorandum issued to EPA Regional Air Directors⁶:

"The transportation conformity rule (40 CFR parts 51 and 93) and the general conformity rule (58 FR 63214; November 30, 1993) apply to nonattainment areas and maintenance areas operating under maintenance plans. Under either conformity rule one means of demonstrating conformity of federal actions is to indicate that expected emissions from planned actions are consistent with the emissions budget for the area. Emissions budgets in LMP areas may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that an area satisfying the LMP criteria will experience so much growth during that period of time such that a violation of the PM₁₀ NAAQS would result. While this policy does not exempt an area from the need to affirm conformity, it does allow the area to demonstrate conformity without undertaking certain requirements of these rules. For transportation conformity purposes, EPA would be concluding that emissions in these areas need not be capped for the maintenance period, and, therefore, a regional emissions analysis would not be required. Similarly, Federal actions subject to the general conformity rule could be considered to satisfy the "budget test" specified in section 93.158 (a)(5)(i)(A) of the rule, for the same reasons that the budgets are essentially considered to be unlimited.

EPA approval of an LMP will provide that if the LMP criteria are no longer satisfied and a full maintenance plan must be developed to meet CAA requirements (see Calcagni Memo referenced in footnote #2 for full maintenance plan guidance), the approval of the LMP would remain applicable for

⁶ "Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas"; memorandum from Lydia Wegman (EPA OAQPS) to EPA Regional Air Directors; August 21, 2001. EPA Region 1 has indicated that this discussion also applies to CO LMP areas. A full copy of EPA's guidance is included in Appendix A.

conformity purposes only until the full maintenance plan is submitted and EPA has found its motor vehicle emissions budgets adequate for conformity purposes under 40 CFR parts 51 and 93. EPA will condition its approval of all LMPs in this fashion because in the case where the LMP criteria are not met and a full maintenance plan is required EPA believes that LMPs would no longer be an appropriate mechanism for assuring maintenance of the standards."

Consistent with the above discussion, CTDEP will use the interagency consultation process to:

- 1) Inform the Connecticut Department of Transportation (CTDOT) and metropolitan planning organizations (MPO's) that, upon approval of the limited maintenance plans, CO emissions budgets will no longer be constraining for transportation conformity because of the low levels of emissions and expected growth rates during the duration of the limited maintenance periods. However, if the EPA determines that the LMP criteria are longer satisfied in any area, CTDEP will develop a full maintenance plan, including a motor vehicle emissions budget which will become applicable at the time EPA determines it to be adequate for conformity purposes.
- 2) Ensure that project-level CO evaluations of transportation projects (i.e., project-level conformity, as described in 40 CFR 93.116) are carried out in each area as part of environmental reviews⁷ or Connecticut's indirect source permitting program⁸.

⁷ Environmental review documents are prepared when required by the National Environmental Policy Act or the Connecticut Environmental Policy Act.

⁸ CTDEP is currently considering modifications to the indirect source program, but anticipates any changes will require similar project-level CO reviews.

5.0 CONTINGENCY PLAN

Section 175A of the Clean Air Act requires that maintenance plans include contingency measures to promptly address and correct any violation of the NAAQS that occurs after redesignation of an area. The plan should identify the corrective measures that will be expeditiously pursued once they are triggered by a specified event, such as a measured violation of the NAAQS.

CTDEP has developed a two-phase contingency plan to address any verified monitored exceedance of the CO NAAQS in any of the three maintenance areas. This contingency plan replaces those currently in effect in each area. The new contingency plan consists of the following steps and actions to be taken if there is a measured CO concentration above the level of the NAAQS that meets quality assurance criteria and does not qualify for exclusion under EPA's "exceptional events" policy⁹. Implementation of the contingency plan after the first verified CO exceedance is intended to provide an opportunity for corrective action before any violations (i.e., a second CO exceedance in the same calendar year) can occur.

- 1) Subsequent to the verification of any measured exceedance of the CO NAAQS, the CTDEP will promptly analyze available air quality, meteorological, traffic, and other relevant data near the affected monitor to determine the likely cause of the exceedance. The CTDEP will confer with the appropriate officials at the CTDOT, regional planning agencies, and municipalities to determine if a local remedy (e.g., traffic signal changes, revised parking ordinances) is appropriate to avoid future exceedances of the standard. If such local actions are feasible and determined to be effective, CTDEP will work with the affected agencies to pursue implementation as soon as possible. If local actions are determined to be infeasible or ineffective, CTDEP will pursue the second-phase of the contingency plan.
- 2) The second phase of the contingency plan will be triggered if implementation of local corrective action is judged infeasible or ineffective (i.e., if another verified exceedance is recorded after the first phase actions are fully implemented). As part of the second-phase of the plan, CTDEP will evaluate whether any current or recently adopted (at the time of the exceedance) future control programs will provide adequate additional emission reductions to prevent future CO exceedances at the affected monitor. CTDEP will use EPA-approved modeling techniques available at the time of the exceedance (e.g., currently MOBILE6.2 for emission estimates) to estimate expected future emission reductions and determine the resulting effect at the monitor of concern.

Note that CO emissions from highway sources are projected to decrease by more than 30% by the end of the second 10-year maintenance periods (see Table 2), even without accounting for additional reductions from the current reformulated gasoline and vehicle emissions testing

⁹ "Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events," U.S.EPA, Office of Air and Radiation, Office of Air Quality Planning and Standards Monitoring and Data Analysis Division, Research Triangle Park, N.C. 27711, EPA-450/4-86-007 July 1986.

programs. Highway sources are the dominant contributor to ambient CO public exposures (due to the proximity of homes, businesses, and pedestrians to high vehicle traffic areas); therefore, measured CO concentrations are expected to continue to decrease into the foreseeable future.

APPENDIX A

EPA Guidance Regarding Limited Maintenance Plans

- **“Limited Maintenance Plan Option for Non-Classifiable CO Nonattainment Areas”; memorandum from Joseph Paisie (USEPA OAQPS) to Regional Air Branch Chiefs; October 6, 1995.**
- **“Carbon Monoxide Limited Maintenance Areas for the Hartford-New Britain-Middletown, the New Haven-Meriden-Waterbury, and the Connecticut Portion of the New York-Northern New Jersey-Long Island Carbon Monoxide Attainment/Maintenance Areas”; letter from Tim Williamson (EPA Region 1) to Anne Gobin (CTDEP); March 12, 2004.**
- **“Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas”; memorandum from Lydia Wegman (EPA OAQPS) to EPA Regional Air Directors; August 21, 2001.**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

October 6, 1995

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: Limited Maintenance Plan Option for Nonclassifiable CO
Nonattainment Areas

FROM: Joseph W. Paisie, Group Leader *Joseph W. Paisie*
Integrated Policy and Strategies Group (MD-15)

TO: Air Branch Chiefs, Regions I-X

On November 16, 1994, EPA issued guidance regarding a limited maintenance plan option for nonclassifiable ozone nonattainment areas in a memorandum from Sally L. Shaver, Director, Air Quality Strategies and Standards Division, to Regional Air Division Directors. EPA believes that such an option is also appropriate for nonclassifiable CO nonattainment areas and the following questions and answers set forth EPA's guidance regarding the availability of this option for such areas. As this is guidance, final and binding determinations regarding the eligibility of areas for the limited maintenance plan option will only be made in the context of notice and comment rulemaking actions regarding specific redesignation requests.

If there are any questions concerning the limited maintenance plan option for nonclassifiable CO areas, please contact me at (919) 541-5556 or Larry Wallace at (919) 541-0906.

Attachment

cc: E. Cummings, OMS
K. McLean, OGC
C. Oldham
L. Wallace

10/6/95

Limited Maintenance Plan Option for Nonclassifiable CO
Nonattainment areas

1. Question:

What requirements must CO nonclassifiable areas, which are attaining the CO NAAQS with a design value that is significantly below the NAAQS, meet in order to have an approvable maintenance plan under section 175A of the Act?

Answer:

Nonclassifiable CO nonattainment areas seeking redesignation to attainment whose design values are at or below 7.65ppm (85 percent of exceedance levels of the CO NAAQS) at the time of redesignation may choose to submit a less rigorous maintenance plan than was formerly required. This new option is being termed a limited maintenance plan. Nonclassifiable CO areas with design values greater than 7.65ppm will continue to be subject to full maintenance plan requirements described in the September 4, 1992 memorandum, "Procedures for Processing Requests to Redesignate Areas to Attainment," from John Calcagni, former Director of the OAQPS Air Quality Management Division to the Regional Air Division Directors.

The EPA now believes that it is justifiable and appropriate to apply a different set of maintenance plan requirements to a nonclassifiable CO nonattainment areas whose monitored air quality is equal to or less than 85 percent of exceedance levels of the ozone NAAQS. The EPA does not believe that the full maintenance plan requirements need be applied to these areas because they have achieved air quality levels well below the standard without the application of control measures required by the Act for moderate and serious nonattainment areas. Also, these areas do not have either a recent history of monitored violation of the CO NAAQS or a long prior history of monitored air quality problems. The EPA believes that the continued applicability of prevention of significant deterioration (PSD) requirements, any control measures already in the SIP, and Federal measures (such as the Federal motor vehicle control program) should provide adequate assurance of maintenance for these areas.

2. Question:

Besides having a design value that is equal to or less than 85% of the CO NAAQS what other requirements are necessary for a nonclassifiable CO nonattainment area to qualify for the limited maintenance plan option?

Answer:

To qualify for the limited maintenance plan option, the CO design value for the area, based on the 8 consecutive quarters (2 years of data) used to demonstrate attainment, must be at or below 7.65ppm (85 percent of exceedance levels of the ozone NAAQS). Additionally, the design value for the area must continue to be at or below 7.65ppm until the time of final EPA action on the redesignation. The method for calculating design values is presented in the June 18, 1990 memorandum, "Ozone and Carbon Monoxide Design Value Calculations," from William G. Laxton, former Director of the OAQPS Technical Support Division to Regional Air Directors. The memorandum focuses primarily on determining design values for nonattainment areas in order to classify the areas as moderate or serious for CO. Therefore, the document discusses determining the design value for an area based on the monitors which are exceeding the standard. In the case of a nonattainment area seeking redesignation to attainment, all monitors must be meeting the standard. To assess whether a nonclassifiable area meets the applicability cutoff for the limited maintenance plan, a separate design value must be developed for every monitoring site. The highest of these design values is the design value for the whole area. If the area design value is at or below 7.65ppm, the State may select the limited maintenance plan option for the first 10-year maintenance period under section 175A. If the design value for the area exceeds 7.65ppm prior to final EPA action on the redesignation, the area no longer qualifies for the limited maintenance plan and must instead submit a full maintenance plan, as indicated in the September 4, 1992 memorandum.

3. Question:

What elements must be contained in a section 175A maintenance plan for nonclassifiable CO areas which qualify for the limited maintenance plan option?

Answer:

Following is a list of core provisions which should be included in the limited maintenance plan for CO nonclassifiable areas. Any final EPA determination regarding the adequacy of a limited maintenance plan will be made following review of the plan submittal in light of the particular circumstances facing the area proposed for redesignation and based on all relevant available information.

a. Attainment Inventory

The State should develop an attainment emissions inventory to identify a level of emissions in the area which is sufficient to attain the NAAQS. This inventory should be consistent with EPA's most recent guidance¹ on emissions inventories for nonattainment areas available at the time and should represent emissions during the time period associated with the monitoring data showing attainment. The inventory should be based on actual "typical winter day" emissions of CO.

b. Maintenance Demonstration

The maintenance demonstration requirement is considered to be satisfied for nonclassifiable areas if the monitoring data show that the area is meeting the air quality criteria for limited maintenance areas (7.65ppm or 85% of the CO NAAQS). There is no requirement to project emissions over the maintenance period. The EPA believes if the area begins the maintenance period at or below 85 percent of exceedance levels, the air quality along with the continued applicability of PSD requirements, any control measures already in the SIP, and Federal measures, should provide adequate assurance of maintenance over the initial 10-year

¹The EPA's current guidance on the preparation of emissions inventories for ozone areas is contained in the following documents: "Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Volume I" (EPA-450/4-91-016), "Emission Inventory Requirements for Ozone State Implementation Plans" (EPA-450/4-91-010), and "Procedures for Emission Inventory Preparation: Volume IV, Mobile Sources" (EPA-450/4-81-026d).

maintenance period.

When EPA approves a limited maintenance plan, EPA is concluding that an emissions budget may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that such an area will experience so much growth in that period that a violation of the CO NAAQS would result.

c. Monitoring Network/Verification of Continued Attainment

To verify the attainment status of the area over the maintenance period, the maintenance plan should contain provisions for continued operation of an appropriate, EPA-approved air quality monitoring network, in accordance with 40 CFR part 58. This is particularly important for areas using a limited maintenance plan because there will be no cap on emissions.

d. Contingency Plan

Section 175A of the Act requires that a maintenance plan include contingency provisions, as necessary, to promptly correct any violation of the NAAQS that occurs after redesignation of the area. These contingency measures do not have to be fully adopted at the time of redesignation. However, the contingency plan is considered to be an enforceable part of the SIP and should ensure that the contingency measures are adopted expeditiously once they are triggered by a specified event. The contingency plan should identify the measures to be promptly adopted and provide a schedule and procedure for adoption and implementation of the measures. The State should also identify specific indicators, or triggers, which will be used to determine when the contingency measures need to be implemented. While a violation of the NAAQS is an acceptable trigger, States may wish to choose a pre-violation action level as a trigger, such as an exceedance of the NAAQS. By taking early action, a State may be able to prevent any actual violation of the NAAQS and, therefore, eliminate any need on the part of EPA to redesignate an area back to nonattainment.

e. Conformity Determinations Under Limited Maintenance Plans

The transportation conformity rule (58 FR 62188; November 24, 1993) and the general conformity rule (58 FR 63214; November 30, 1993) apply to nonattainment areas and maintenance areas operating under maintenance plans. Under either rule, one means of demonstrating conformity of Federal actions is to indicate that expected emissions from

planned actions are consistent with the emissions budget for the area. Emissions budgets in limited maintenance plan areas may be treated as essentially not constraining for the length of the initial maintenance period because it is unreasonable to expect that such an area will experience so much growth in that period that a violation of the CO NAAQS would result. In other words, EPA would be concluding that emissions need not be capped for the maintenance period. Therefore, in areas with approved limited maintenance plans, Federal actions requiring conformity determinations under the transportation conformity rule could be considered to satisfy the "budget test" required in sections 93.118, 93.119, and 93.120 of the rule. Similarly, in these areas, Federal actions subject to the general conformity rule could be considered to satisfy the "budget test" specified in section 93.158(a)(5)(i)(A) of the rule.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

March 12, 2004

Ms. Anne Gobin,
Connecticut Department of Environmental Protection,
Bureau of Air Management,
79 Elm Street, 5th Floor
Hartford, CT 06106

RE: Carbon Monoxide Limited Maintenance Areas for the Hartford - New Britain - Middletown, the New Haven-Meriden-Waterbury, and the Connecticut Portion of the New York - Northern New Jersey - Long Island Carbon Monoxide Attainment/Maintenance Area.

Dear Ms. Gobin:

I wish to thank your staff for taking the time to discuss the use of "limited maintenance plans" for the three carbon monoxide (CO) maintenance areas listed above. Let me summarize our recent telephone conversation regarding the requirements to develop a limited maintenance plan for the remainder of the first ten-year maintenance period and for the follow-on second ten-year maintenance period for these areas. EPA recommends that Connecticut DEP develop a revision to your state implementation plan (SIP) that contains the following elements:

- One SIP Revision package submitting all three carbon monoxide limited maintenance plan requests.
- Request for a limited maintenance plan for the remainder of the first ten-year maintenance period and the second follow-on ten-year maintenance period (see ten-year periods below).

Name of Attainment Area	First Ten-year Maintenance Period	Second Follow-on Ten-year Maintenance Area
Hartford - New Britain - Middletown Area	1995-2005	2006-2015
New Haven-Meriden-Waterbury Area	1998- 2008	2009-2018
New York - Northern New Jersey - Long Island Area	2000-2010	2011-2020

- A base statewide inventory (point, area and mobile) for periodic inventory year 2002.
- A statewide emission inventory (highway sector and non-road sector) for daily winter carbon monoxide for year 2015 and year 2020 (this represents the earliest end-year of Hartford's follow-on ten-year maintenance period and the latest end-year of NY-N.NJ-LI follow-on ten-year maintenance period).
 - Demonstrate trends in carbon monoxide emissions are going down, to support limited maintenance plan approval.
 - Note: There is no requirement under a carbon monoxide limited maintenance plan to project emissions over the maintenance period. The projected mobile (highway and non-road sectors) statewide inventories for year 2015 and year 2020 would lend support for approval of a limited maintenance plan and help justify why a conformity budget is not required.
 - Highway emission projections would utilize the latest version of MOBILE6.2 using conservative measures likely to be in place such as OBD2 testing, no California low emission vehicle program, no oxy fuel program. Modeling conservatively we can maintain the State's flexibility when implementing vehicle or fuel programs in the future. Relying on specific enhanced vehicle inspection/maintenance programs or special fuels may be seen as a requirement to continue that modeled program into the future.
- Document current carbon monoxide levels from monitoring network by attainment area.
 - The NY-N.NJ-LI area should also document monitoring data from the New York and Northern New Jersey sectors.
- Demonstrate continued monitoring attainment of the carbon monoxide one-hour and eight-hour NAAQS.
 - Summarize historic data.
 - The maintenance demonstration requirement is considered to be satisfied for the attainment area if the monitoring data show that the area is meeting the air quality criteria for limited maintenance areas (design value at or below 7.65ppm or 85% of the carbon monoxide NAAQS).
- Identify the latest carbon monoxide eight-hour design value for each of the three carbon monoxide attainment areas with a maintenance plan.

- Document CO design value for maintenance area. And explain how the area's CO design value is at or below 7.65 ppm (85 percent of exceedance levels of the CO NAAQS).
- Commit to continuous CO monitoring (EPA-approved air quality monitoring network under 40 CFR part 58) throughout the first and second ten-year period.
- Add a qualifier that if a carbon monoxide limited maintenance area monitors carbon monoxide concentrations resulting in a design value above the eligibility criteria of 7.65 parts per million, then the maintenance area would no longer qualify for a limited maintenance plan and CT DEP would coordinate with EPA to develop a full maintenance plan.
- Address future transportation conformity requirements for the attainment areas with a CO limited maintenance plan.
- Confirm that hotspot CO / project level CO evaluation of transportation projects (project level conformity, see 40 CFR 93.116) still applies. (This transportation conformity requirement is in addition to any of Connecticut's indirect source permit requirements.)
- Emissions budgets in limited maintenance plan areas may be treated as essentially not constraining as long as the area continues to meet the limited maintenance criteria because it is unreasonable to expect that such areas will experience so much growth that a violation of the carbon monoxide National Ambient Air Quality Standard would result. Therefore, in areas with approved limited maintenance plans, Federal actions requiring conformity determinations under the transportation conformity rule are considered to satisfy the "budget test." All aspects of transportation conformity (with the exception of satisfying the emission budget test) will still be required.
- Identify contingency measures, with a schedule for implementation to assure prompt correction of any air quality problems.
- Identify trigger for implementing contingency measures. The contingency plan write-up from page four of EPA's October 6, 1995, "Limited Maintenance Plan Option for Nonclassifiable CO Nonattainment Areas," is presented below. A full copy of EPA's guidance is also enclosed with this letter for your use.

CONTINGENCY PLAN

“Section 175A of the Act requires that a maintenance plan include contingency provisions, as necessary, to promptly correct any violation of the NAAQS that occurs after redesignation of the area. These contingency measures do not have to be fully adopted at the time of redesignation. However, the contingency plans is considered to be an enforceable part of the SIP and should insure that the contingency measures are adopted expeditiously once they are triggered by a specified event. The contingency plan should identify the measures to be promptly adopted and provide a schedule and procedure for adoption and implementation of the measures. The State should also identify specific indicators, or triggers, which will be used to determine when the contingency measures need to be implemented. While a violation of the NAAQS is an acceptable trigger, States may wish to choose a pre-violation action level as a trigger, such as an exceedance of the NAAQS. By taking early action, a State may be able to prevent any actual violation of the NAAQS and, therefore, eliminate any need on the part of EPA to redesignate an area back to nonattainment”.

EPA could parallel-process this SIP amendment. If we go that route, EPA would propose approval in the Federal Register and hold a public comment period at the same time Connecticut Department of Environmental Protection held their state public hearing process.

An example of a Massachusetts SIP Revision submitted for the Lowell, Waltham, Worcester and Springfield re-designation to attainment and limited carbon monoxide limited maintenance plans can be found at URL Address:

<http://www.state.ma.us/dep/bwp/daqc/daqcpubs.htm>

Carbon Monoxide

Background Document and Technical Support

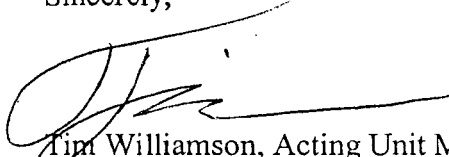
Proposed Revision to State Implementation Plan for Carbon Monoxide.

Technical support document dated September 2000.

cotsd.doc 672 KB images: **Figure 1** and **Figure 8**

If you have any question, Please feel free to contact Donald Cooke of my staff at (617) 918-1668, or by e-mail at cooke.donald@epa.gov.

Sincerely,



Tim Williamson, Acting Unit Manager
Air Quality Unit, Office of Ecosystem Protection

Enclosure: October 6, 1995, "Limited Maintenance Plan Option for Nonclassifiable CO Nonattainment Areas," from Joseph W. Paisie, Group Leader, Integrated Policy and Strategies Group, Office of Air Quality Planning and Standards, U.S. EPA, Research Triangle Park, North Carolina.

cc: Paul Bodner, CT DEP, Bureau of Air Management
 David Wackter, CT DEP, Bureau of Air Management
 David Conroy, Acting Air Program Manager, OEP, EPA New England
 Donald Cooke, Air Quality Unit, OEP, EPA New England

MEMORANDUM

SUBJECT: Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas

FROM: Lydia Wegman, Director
AQSSD (MD-15)

TO: Director, Office of Ecosystem Protection, Region I
Director, Division of Environmental Planning & Protection, Region II
Director, Air Protection Division, Region III
Director, Air, Pesticides & Toxics Management Division, Region IV
Director, Air and Radiation Division, Region V
Director, Air Pesticides & Toxics, Region VI
Director, Air and Toxics Division, Regions VII, IX
Director, Air Program, Region VIII
Director, Office of Air Quality, Region X

I. What is a Limited Maintenance Plan?

This memorandum sets forth new guidance¹ on maintenance plan submissions for certain moderate particulate matter (PM₁₀) nonattainment areas seeking redesignation to attainment (see section IV for further details on qualifying for the policy). If the area meets the criteria listed in this policy the State may submit a maintenance plan at the time it is requesting redesignation that is more streamlined than would ordinarily be permitted. This new option is being termed a limited maintenance plan (LMP)².

II. Why is there a need for a limited maintenance plan policy?

¹This memorandum is intended to provide EPA's preliminary views on how certain moderate PM₁₀ nonattainment areas may qualify to submit a maintenance plan that meets certain limited requirements. Since it represents only the Agency's preliminary thinking that is subject to modification, this guidance is not binding on States, Tribes, the public, or EPA. Issues concerning the applicability of the limited maintenance plan policy will be addressed in actions to redesignate moderate PM₁₀ nonattainment areas under § 107 of the CAA. It is only when EPA promulgates redesignations applying this policy that those determinations will become binding on States, Tribes, the public, and EPA as a matter of law.

²Moderate PM₁₀ areas that do not meet the applicability criteria of this policy, and all serious PM₁₀ nonattainment areas, should submit maintenance plans that meet our guidance for submission of a full maintenance plan as described in the September 4, 1992 memorandum, "Procedures for Processing Requests to Redesignate Areas to Attainment," from John Calcagni, former Director of the Office of Air Quality Planning and Standards (OAQPS) Air Quality management Division to the Regional Air Division Directors (hereafter known as the Calcagni Memo).

Before the U.S. Court of Appeals for the District of Columbia handed down its decision vacating the 1997 PM₁₀ national ambient air quality standards (NAAQS)(see *American Trucking Associations, et al. v. Environmental Protection Agency (EPA)*, 175 F.3d 1027 (D.C. Cir. 1999)), we were prepared to make case-by-case determinations that would make the 1987 PM₁₀ NAAQS no longer applicable in any area meeting the standards. In taking actions to remove the applicability of the 1987 NAAQS, we would have removed, as well, the nonattainment designation and Clean Air Act (CAA) part D requirements from qualifying areas. As a result of the D.C. Circuit's decision, for areas subject to the 1987 NAAQS, the only route to recognized attainment of the NAAQS and removal of nonattainment status and requirements is formal redesignation to attainment, including submittal of a maintenance plan. Since many areas have been meeting the PM₁₀ NAAQS for 5 years or more and have a low risk of future exceedances, we believe a policy that would allow both the States and EPA to redesignate speedily areas that are at little risk of PM₁₀ violations would be useful.

III. How did EPA develop the approach used in the LMP option?

The EPA has studied PM₁₀ air quality data information for the entire country over the past eleven years (1989-1999) and has determined that some moderate PM₁₀ nonattainment areas have had a history of low PM₁₀ design values with very little inter-annual variation. When we looked at all the monitoring sites reporting data for those years, the data indicate that most of the average design values fall below 2 levels, 98 µg/m³ for the 24-hr PM₁₀ NAAQS and 40 µg/m³ for the annual PM₁₀ NAAQS. For most monitoring sites these levels are also below their individual site-specific critical design values (CDV). The CDV is an indicator of the likelihood of future violations of the NAAQS given the current average design value and its variability. The CDV is the highest average design value an area could have before it may experience a future exceedance of the NAAQS with a certain probability. A detailed explanation of the CDV is found in Attachment A³ to this policy which, because of its length, is a separate document accompanying this memorandum.

We believe that the very small amount of variation between the peaks and means in most of the data indicates a very stable relationship that can be reasonably expected to continue in the future absent any significant changes in emissions. The period we assessed provides a fairly long historical record and the data could therefore be expected to have been affected by a full range of meteorological conditions over the period. Therefore, the amount of emissions should be the only variable that could affect the stability in the air quality data. We believe we can reliably make estimates about the future variability of PM₁₀ concentrations across the country based on our statistical analysis of this data record, especially in areas where the amount of emissions is not expected to change.

IV. How do I qualify for the LMP option ?

³ Dr. Shao-Hang Chu's paper entitled "Critical Design Value and Its Applications" explains the CDV approach and is included in its entirety in Attachment A. This paper has been accepted for publication and presentation at the 94th Air and Waste Management Association (A&WMA) Annual Conference in June 2001 in Orlando, Florida.

To qualify for the limited maintenance plan option, an area should meet the following applicability criteria. The area should be attaining the NAAQS and the average PM_{10} design value⁴ for the area, based upon the most recent 5 years of air quality data at all monitors in the area, should be at or below $40 \mu\text{g}/\text{m}^3$ for the annual and $98 \mu\text{g}/\text{m}^3$ for the 24-hr PM_{10} NAAQS with no violations at any monitor in the nonattainment area⁵. If an area cannot meet this test it may still be able to qualify for the LMP option if the average design values of the site are less than their respective site-specific CDV.

We believe it is appropriate to offer this second method of qualifying for the LMP because, based on the air quality data we have studied, we believe there are some monitoring sites with average design values above $40 \mu\text{g}/\text{m}^3$ or $98 \mu\text{g}/\text{m}^3$, depending on the NAAQS in question, that have experienced little variability in the data over the years. When the CDV calculation was performed for these sites we discovered that their average design values are less than their CDVs, indicating that the areas have a very low probability (1 in 10) of exceeding the NAAQS in the future. We believe it is appropriate to provide these areas the opportunity to qualify for the LMP in this circumstance since the $40 \mu\text{g}/\text{m}^3$ or $98 \mu\text{g}/\text{m}^3$ criteria are based on a national analysis and don't take into account each local situation.

The final criterion is related to mobile source emissions. The area should expect only limited growth in on-road motor vehicle PM_{10} emissions (including fugitive dust) and should have passed a motor vehicle regional emissions analysis test. It is important to consider the impact of future transportation growth in the LMP, since the level of PM_{10} emissions (especially from fugitive dust) is related to the level of growth in vehicle miles traveled (VMT). Attachment B (below) should be used for making the motor vehicle regional emissions analysis demonstration.

If the State determines that the area in question meets the above criteria, it may select the LMP option for the first 10 year maintenance period. Any area that does not meet these criteria should plan to submit a full maintenance plan that is consistent with our guidance in the Calcagni Memo in order to be redesignated to attainment. If the LMP option is selected, the State should continue to meet the qualifying criteria until EPA has redesignated the area to attainment. If an area no longer qualifies for the LMP option because a change in air quality affects the average design values before the redesignation takes effect, the area will be expected to submit a full maintenance plan.

Once an area selects the LMP option and it is in effect, the State will be expected to recalculate the average design value for the area annually and determine if the criteria used to qualify for the LMP

⁴The methods for calculating design values for PM_{10} are presented in a document entitled the "PM₁₀ SIP Development Guideline", EPA-450/2-86-001, June 1987. The State should determine the most appropriate method to use from this Guideline in consultation with the appropriate EPA Regional office staff.

⁵If the EPA determines that the meteorology was not representative during the most recent five-year period, we may reject the State's request to use the LMP option and request, instead, submission of a full maintenance demonstration.

will still be met. If, after performing the annual recalculation of the area's average design value in a given year, the State determines that the area no longer qualifies for the LMP, the State should take action to attempt to reduce PM_{10} concentrations enough to requalify for the LMP. One possible approach the State could take is to implement a contingency measure or measures found in its SIP. If, in the next annual recalculation the State is able to re-qualify for the LMP, then the LMP will go back into effect. If the attempt to reduce PM_{10} concentrations fails, or if it succeeds but in future years it becomes necessary again to address increasing PM_{10} concentrations in the area, that area no longer qualifies for the LMP. We believe that repeated increases in PM_{10} concentrations indicate that the initial conditions that govern air quality and that were relied on to determine the area's qualification for the LMP have changed, and that maintenance of the NAAQS can no longer be assumed. Therefore, the LMP cannot be reinstated by further recalculations of the design values at this point. Once the LMP is determined to no longer be in effect, a full maintenance plan should be developed and submitted within 18 months of the determination.

Treatment of data used to calculate the design values.

Flagged Particulate Matter Data:

Three policies allow PM-10 data to be flagged for special consideration:

- Exceptional Events Policy (1986) for data affected by infrequent events such as industrial accidents or structural fires near a monitoring site;
- Natural Events Policy (1996) for data affected by wildfires, high winds, and volcanic and seismic activities, and;
- Interim Air Quality Policy on Wildland and Prescribed Fires for data affected by wildland fires that are managed to achieve resource benefits.

We will treat data affected by these events consistently with these previously-issued policies. We expect States to consider all data (unflagged and flagged) when determining the design value. The EPA Regional offices will work with the State to determine the validity of flagged data. Flagged data may be excluded on a case-by-case basis depending on State documentation of the circumstances justifying flags. Data flagged as affected by exceptional or natural events will generally not be used when determining the design value. However, in order for data affected by a natural event to be excluded, an adequate Natural Events Action Plan is required as described in the Natural Events policy.

Data flagged as affected by wildland and prescribed fires will be used in determining the design value. If the State is addressing wildland and prescribed fire use with the application of smoke management programs, the State may

submit an LMP if the design value is too high only as a result of the fire-affected data.

We are in the process of developing a policy to address agricultural burning. When it is finalized we will amend the LMP option to account for the new policy.

V. What should an LMP consist of?

Under the LMP, we will continue to satisfy the requirements of Section 107(d)(3)(E) of the Act which provides that a nonattainment area can be redesignated to attainment only if the following criteria are met:

1. The EPA has determined that the NAAQS for the applicable pollutant has been attained.
2. The EPA has fully approved the applicable implementation plan under section 110(k).
3. The EPA has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions.
4. The State has met all applicable requirements for the area under section 110 and part D.
5. The EPA has fully approved a maintenance plan, including a contingency plan, for the area under section 175A.

However, there are some differences between what our previous guidance (the Calcagni memo) recommends that States include in a maintenance plan submission and what we are recommending under this policy for areas that qualify for the LMP. The most important difference is that under the LMP the demonstration of maintenance is presumed to be satisfied. The following is a list of core provisions which should be included in an LMP submission. Note that any final EPA determination regarding the adequacy of an LMP will be made following review of the plan submitted in light of the particular circumstances facing the area proposed for redesignation and based upon all available information.

a. Attainment Plan

The State's approved attainment plan should include an emissions inventory (attainment inventory) which can be used to demonstrate attainment of the NAAQS. The inventory should represent emissions during the same five-year period associated with the air quality data used to determine whether the area meets the applicability requirements of this policy (i.e., the most recent five years of air quality data). If the attainment inventory year is not one of the most recent five years, but the State can show that the attainment inventory did not change significantly during that five-year period, it may still be used to satisfy the policy. If the attainment inventory is determined to not be representative of the most recent 5 years, a new inventory must be developed. The State should

review its inventory every three years to ensure emissions growth is incorporated in the attainment inventory if necessary.

b. Maintenance Demonstration

The maintenance demonstration requirement of the Act will be considered to be satisfied for the moderate PM₁₀ nonattainment areas meeting the air quality criteria discussed above. If the tests described in Section IV are met, we will treat that as a demonstration that the area will maintain the NAAQS. Consequently, there is no need to project emissions over the maintenance period.

c. Important elements that should be contained within the redesignation request

1. Monitoring Network Verification of Continued Attainment

To verify the attainment status of the area over the maintenance period, the maintenance plan should contain a provision to assure continued operation of an appropriate, EPA-approved air quality monitoring network, in accordance with 40 CFR part 58. This is particularly important for areas using an LMP because there will be no cap on emissions.

2. Contingency Plan

Section 175A of the Act states that a maintenance plan must include contingency provisions, as necessary, to promptly correct any violation of the NAAQS which may occur after redesignation of the area to attainment. These contingency measures do not have to be fully adopted at the time of redesignation. However, the contingency plan is considered to be an enforceable part of the SIP and the State should ensure that the contingency measures are adopted as soon as possible once they are triggered by a specific event. The contingency plan should identify the measures to be adopted, and provide a schedule and procedure for adoption and implementation of the measures if they are required.

Normally, the implementation of contingency measures is triggered by a violation of the NAAQS but the State may wish to establish other triggers to prevent a violation of the NAAQS, such as an exceedance of the NAAQS.

3. Approved attainment plan and section 110 and part D CAA requirements:

In accordance with the CAA, areas seeking to be redesignated to attainment under the LMP policy must have an attainment plan that has been approved by EPA, pursuant to section 107(d)(3)(E). The plan must include all control measures that were relied on by the State to demonstrate attainment of the NAAQS. The State must also ensure that the CAA requirements for PM₁₀ pursuant to section 110 and part D of the Act have been satisfied. To comply with the statute, the LMP should clearly indicate that all controls that were relied on to demonstrate attainment will remain in place. If a State wishes to roll back or eliminate controls, the area can no longer qualify for the LMP and the area will become subject to full maintenance plan requirements within 18 months of the determination that the LMP is no longer in effect.

V. How is Conformity treated under the LMP option?

The transportation conformity rule (40 CFR parts 51 and 93) and the general conformity rule (58 FR 63214; November 30, 1993) apply to nonattainment areas and maintenance areas operating under maintenance plans. Under either conformity rule one means of demonstrating conformity of Federal actions is to indicate that expected emissions from planned actions are consistent with the emissions budget for the area. Emissions budgets in LMP areas may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that an area satisfying the LMP criteria will experience so much growth during that period of time such that a violation of the PM₁₀ NAAQS would result. While this policy does not exempt an area from the need to affirm conformity, it does allow the area to demonstrate conformity without undertaking certain requirements of these rules. For transportation conformity purposes, EPA would be concluding that emissions in these areas need not be capped for the maintenance period, and, therefore, a regional emissions analysis would not be required. Similarly, Federal actions subject to the general conformity rule could be considered to satisfy the "budget test" specified in section 93.158 (a)(5)(i)(A) of the rule, for the same reasons that the budgets are essentially considered to be unlimited.

EPA approval of an LMP will provide that if the LMP criteria are no longer satisfied and a full maintenance plan must be developed to meet CAA requirements (see Calcagni Memo referenced in footnote #2 for full maintenance plan guidance), the approval of the LMP would remain applicable for conformity purposes only until the full maintenance plan is submitted and EPA has found its motor vehicle emissions budgets adequate for conformity purposes under 40 CFR parts 51 and 93. EPA will condition its approval of all LMPs in this fashion because in the case where the LMP criteria are not met and a full maintenance plan is required EPA believes that LMPs would no longer be an appropriate mechanism for assuring maintenance of the standards.

For further information concerning the LMP option for moderate PM₁₀ areas please contact

Gary Blais at (919) 541-3223, or for questions about the CDV approach contact Dr. Shao-Hang Chu at (919) 541-5382. For information concerning transportation conformity requirements, please contact Meg Patulski of the Office of Transportation and Air Quality at (734) 214-4842.

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ATTACHMENT B: MOTOR VEHICLE REGIONAL ANALYSIS METHODOLOGY

The following methodology is used to determine whether increased emissions from on-road mobile sources could, in the next 10 years, increase concentrations in the area and threaten the assumption of maintenance that underlies the LMP policy. This analysis must be submitted and approved in order to be eligible for the LMP option.

The following equation should be used:

$$DV + (VMT_{pi} \times DV_{mv}) \leq MOS$$

Where:

DV	=	the area's design value based on the most recent 5 years of quality assured data in $\mu\text{g}/\text{m}^3$
VMT_{pi}	=	the projected % increase in vehicle miles traveled (VMT) over the next 10 years
DV_{mv}	=	motor vehicle design value based on on-road mobile portion of the attainment year inventory in $\mu\text{g}/\text{m}^3$
MOS	=	margin of safety for the relevant PM-10 standard for a given area: 40 $\mu\text{g}/\text{m}^3$ for the annual standard or 98 $\mu\text{g}/\text{m}^3$ for the 24-hour standard

Please note that DV_{mv} is derived by multiplying DV by the percentage of the attainment year inventory represented by on-road mobile sources. This variable should be based on both primary and secondary PM_{10} emissions of the on-road mobile portion of the attainment year inventory, including re-entrained road dust.

States should consult with EPA regarding the three inputs used in the above calculation, and all EPA comments and concerns regarding inputs and results should be addressed prior to submitting a limited maintenance plan and redesignation request.

The VMT growth rate (VMT_{pi}) should be calculated through the following methods:

- 1) an extrapolation of the most recent 10 years of Highway Performance Monitoring System (HPMS) data over the 10-year period to be addressed by the limited maintenance plan; and
- 2) a projection of VMT over the 10-year period that would be covered by the limited maintenance plan, using whatever method is in practice in the area (if different than #1).

Areas where method #1 is the current practice for calculating VMT do not also have to do calculation #2, although this is encouraged. All other areas should use methods #1 and #2, and VMT_{pi} is

whichever growth rate produced by methods #1 and #2 is highest. Areas will be expected to use transportation models for method #2, if transportation models are available. Areas without transportation models should use reasonable professional practice.

Examples

1. DV = 80 $\mu\text{g}/\text{m}^3$
 VMT_{pi} = 36%
 DV_{mv} = 30 $\mu\text{g}/\text{m}^3$
 MOS = 98 $\mu\text{g}/\text{m}^3$ for 24-hour PM-10 standard

$$80 + (.36 * 30) = 91$$

Less than 98 – Area passes regional analysis criterion.

2. DV = 35 $\mu\text{g}/\text{m}^3$
 VMT_{pi} = 25%
 DV_{mv} = 6 $\mu\text{g}/\text{m}^3$
 MOS = 40 $\mu\text{g}/\text{m}^3$ for annual PM-10 standard

$$35 + (.25 * 6) = 37$$

Less than 40 – Area passes regional analysis criterion.

3. DV = 115 $\mu\text{g}/\text{m}^3$
 VMT_{pi} = 25%
 DV_{mv} = 60 $\mu\text{g}/\text{m}^3$
 MOS = 98 $\mu\text{g}/\text{m}^3$ for 24-hour PM-10 standard

$$115 + (.25 * 60) = 130$$

More than 98 – Area does not pass criterion. Full section 175A maintenance plan required.

APPENDIX B

Table of 2nd-Highest CO Values in Connecticut 1975 - 2003

**2nd-Highest Annual CO Concentrations: 1975 - 2003
(PPM)**

[illegible]

APPENDIX C

MOBILE6.2 Input and Output Files

The enclosed compact disc contains all MOBILE6.2 input and output files used to develop carbon monoxide emission estimates from on-road mobile sources for the years 2002, 2015, and 2020. (Note that the 2015 and 2020 runs provide conservatively high CO estimates because they do not account for either reformulated gasoline or the vehicle emissions testing program.)

Please contact the Paul Bodner of the CTDEP (860-424-3383) if you are unable to access the files on the compact disc.

APPENDIX D

NONROAD Model Input and Output Files

Emission Totals by Source Classification and Pollutant

All Fuels

Tons/Day

The State of Connecticut

2002 CT Winter - Typical Winter Weekday

Typical weekday for Winter Season, 2002

Date of Model Run: May 11 11:59:53: 2004

Today's Date: 5/11/2004

Source Classification	Exhaust VOC	Exhaust NOx	Exhaust CO	Exhaust PM2.5	Exhaust SOx	Exhaust CO2
Agricultural Equipment	0.03	0.20	0.23	0.02	0.02	14.82
Airport Equipment	0.01	0.10	0.11	0.01	0.01	8.34
Commercial Equipment	6.03	5.87	152.82	0.44	0.40	602.62
Construction and Mining Equipment	2.70	15.91	21.65	1.38	1.86	1,334.58
Industrial Equipment	3.90	19.25	80.26	0.54	0.73	1,278.98
Lawn and Garden Equipment (Com)	16.19	2.35	111.44	0.62	0.12	285.32
Lawn and Garden Equipment (Res)	3.91	0.50	31.56	0.10	0.01	71.52
Logging Equipment	0.02	0.02	0.11	0.00	0.00	2.34
Pleasure Craft	0.91	0.11	2.39	0.05	0.01	17.54
Railroad Equipment	0.03	0.15	0.37	0.02	0.01	10.34
Recreational Equipment	3.47	0.14	14.09	0.04	0.02	68.33
Totals:	37.20	44.60	415.05	3.21	3.19	3,694.73

Emission Totals by Source Classification and Pollutant

All Fuels

Tons/Day

The State of Connecticut

2002 CT Winter - Typical Winter Weekday

Typical weekday for Winter Season, 2002

Date of Model Run: May 11 11:59:53: 2004

Today's Date: 5/11/2004

Source Classification	Crankcase VOC	Diurnal VOC	Vapor Displacement VOC	Spillage VOC	Total VOC
<hr/>					
Agricultural Equipment	0.00	0.00	0.00	0.00	0.03
Airport Equipment	0.00	0.00	0.00	0.00	0.01
Commercial Equipment	0.18	0.11	0.12	0.25	6.69
Construction and Mining Equipment	0.06	0.01	0.01	0.00	2.79
Industrial Equipment	1.00	0.01	0.03	0.01	4.94
Lawn and Garden Equipment (Com)	0.04	0.07	0.10	1.26	17.66
Lawn and Garden Equipment (Res)	0.00	0.31	0.03	0.35	4.60
Logging Equipment	0.00	0.00	0.00	0.00	0.02
Pleasure Craft	0.00	2.03	0.01	0.00	2.94
Railroad Equipment	0.00	0.00	0.00	0.00	0.04
Recreational Equipment	0.00	0.05	0.03	0.03	3.58
<hr/>					
Totals:	1.28	2.59	0.32	1.90	43.30

*** Output Files ***

Output data file :c:\nonroad\colmpr~1\lmp2002a.out

*** Input Files ***

Options file :C:\NONROAD\COLMPR~1\LMP2002A.OPT
Allocation XREF file:c:\nonroad\data\allocate\allocate.xrf
Activity file :c:\nonroad\data\activity\activity.dat
State/Regions file :c:\nonroad\data\season\season.dat
Seasonality file :c:\nonroad\data\season\season.dat
Tech fractions file :c:\nonroad\data\tech\tech.dat

*** Population Files ***

:c:\nonroad\data\pop\ct.pop

*** Emission Factors Files ***

BSFC file :c:\nonroad\data\emsfac\bsfc.emf
THC EXHAUST file :c:\nonroad\data\emsfac\exhthc.emf
CO EXHAUST file :c:\nonroad\data\emsfac\exhco.emf
NOX EXHAUST file :c:\nonroad\data\emsfac\exhnox.emf
CO2 EXHAUST file : Not Supplied.
SOX EXHAUST file : Not Supplied.
PM EXHAUST file :c:\nonroad\data\emsfac\exhpm.emf
CRANKCASE file :c:\nonroad\data\emsfac\crank.emf
HOT SOAKS file : Not Supplied.
DIURNAL file :c:\nonroad\data\emsfac\diurnal.emf
REFUELING file : Not Supplied.
SPILLAGE file :c:\nonroad\data\emsfac\spillage.emf
RUNINGLOSS file : Not Supplied.
RESTNGLOSS file : Not Supplied.

*** Deterioration Factors Files ***

THC EXHAUST file :c:\nonroad\data\detfac\exhthc.det
CO EXHAUST file :c:\nonroad\data\detfac\exhco.det
NOX EXHAUST file :c:\nonroad\data\detfac\exhnox.det
CO2 EXHAUST file : Not Supplied.
SOX EXHAUST file : Not Supplied.
PM EXHAUST file :c:\nonroad\data\detfac\exhpm.det
CRANKCASE file : Not Supplied.
HOT SOAKS file : Not Supplied.
DIURNAL file : Not Supplied.
REFUELING file : Not Supplied.
SPILLAGE file : Not Supplied.
RUNINGLOSS file : Not Supplied.
RESTNGLOSS file : Not Supplied.

*** Spatial Allocation Files ***

:c:\nonroad\data\allocate\ct_airtr.alo
:c:\nonroad\data\allocate\ct_coal.alo
:c:\nonroad\data\allocate\ct_const.alo
:c:\nonroad\data\allocate\ct_farms.alo
:c:\nonroad\data\allocate\ct_golf.alo
:c:\nonroad\data\allocate\ct_holsl.alo
:c:\nonroad\data\allocate\ct_house.alo
:c:\nonroad\data\allocate\ct_loggn.alo
:c:\nonroad\data\allocate\ct_lscap.alo
:c:\nonroad\data\allocate\ct_mnfg.alo
:c:\nonroad\data\allocate\ct_oil.alo
:c:\nonroad\data\allocate\ct_pop.alo
:c:\nonroad\data\allocate\ct_rvprk.alo
:c:\nonroad\data\allocate\ct_sbc.alo
:c:\nonroad\data\allocate\ct_sbr.alo
:c:\nonroad\data\allocate\ct_snowm.alo
:c:\nonroad\data\allocate\ct_wib.alo
:c:\nonroad\data\allocate\ct_wob.alo

LMP2002A.MSG

*** Growth Indicator Files ***

:c:\nonroad\data\growth\nation.grw

*** Scenario Specific Parameters ***

First Title line :2002 CT Winter - Typical Winter Weekday
Second Title line :
Fuel RVP (psi) : 13.90
Fuel Oxygen weight %: 2.00
Gasoline Sulfur % : 0.0339
Diesel Sulfur % : 0.2318
LPG/CNG Sulfur % : 0.0030
Minimum Temperature : 19.90
Maximum Temperature : 37.00
Average Ambient Temp: 28.60
Altitude of region :LOW
Stage II Control % : 0.00

*** Period Parameters ***

Year of Inventory :2002
Inventory for :SEASONAL period
Emissions summed for:TYPICAL DAY
Season :WINTER
Day of week :WEEKDAY

*** Region of Interest ***

Region level : State-level estimates
States of Interest :09000 - Connecticut

*** Equipment Types ***

All equipment types.

**** Number of Population Records Found ****

09000 Connecticut : 1054

*** Output Files ***

Output data file :c:\nonroad\outputs\lmp2015.out

*** Input Files ***

Options file :c:\NONROAD\LMP2015.OPT
Allocation XREF file:c:\nonroad\data\allocate\allocate.xrf
Activity file :c:\nonroad\data\activity\activity.dat
State/Regions file :c:\nonroad\data\season\season.dat
Seasonality file :c:\nonroad\data\season\season.dat
Tech fractions file :c:\nonroad\data\tech\tech.dat

*** Population Files ***

 :c:\nonroad\data\pop\ct.pop

*** Emission Factors Files ***

BSFC file :c:\nonroad\data\emsfac\bsfc.emf
THC EXHAUST file :c:\nonroad\data\emsfac\exhthc.emf
CO EXHAUST file :c:\nonroad\data\emsfac\exhco.emf
NOX EXHAUST file :c:\nonroad\data\emsfac\exhnox.emf
CO2 EXHAUST file : Not Supplied.
SOX EXHAUST file : Not Supplied.
PM EXHAUST file :c:\nonroad\data\emsfac\exhpm.emf
CRANKCASE file :c:\nonroad\data\emsfac\crank.emf
HOT SOAKS file : Not Supplied.
DIURNAL file :c:\nonroad\data\emsfac\diurnal.emf
REFUELING file : Not Supplied.
SPILLAGE file :c:\nonroad\data\emsfac\spillage.emf
RUNINGLOSS file : Not Supplied.
RESTNGLOSS file : Not Supplied.

*** Deterioration Factors Files ***

THC EXHAUST file :c:\nonroad\data\detfac\exhthc.det
CO EXHAUST file :c:\nonroad\data\detfac\exhco.det
NOX EXHAUST file :c:\nonroad\data\detfac\exhnox.det
CO2 EXHAUST file : Not Supplied.
SOX EXHAUST file : Not Supplied.
PM EXHAUST file :c:\nonroad\data\detfac\exhpm.det
CRANKCASE file : Not Supplied.
HOT SOAKS file : Not Supplied.
DIURNAL file : Not Supplied.
REFUELING file : Not Supplied.
SPILLAGE file : Not Supplied.
RUNINGLOSS file : Not Supplied.
RESTNGLOSS file : Not Supplied.

*** Spatial Allocation Files ***

 :c:\nonroad\data\allocate\ct_airtr.alo
 :c:\nonroad\data\allocate\ct_coal.alo
 :c:\nonroad\data\allocate\ct_const.alo
 :c:\nonroad\data\allocate\ct_farms.alo
 :c:\nonroad\data\allocate\ct_golf.alo
 :c:\nonroad\data\allocate\ct_holsl.alo
 :c:\nonroad\data\allocate\ct_house.alo
 :c:\nonroad\data\allocate\ct_loggn.alo
 :c:\nonroad\data\allocate\ct_lscap.alo
 :c:\nonroad\data\allocate\ct_mnfg.alo
 :c:\nonroad\data\allocate\ct_oil.alo
 :c:\nonroad\data\allocate\ct_pop.alo
 :c:\nonroad\data\allocate\ct_rvprk.alo
 :c:\nonroad\data\allocate\ct_sbc.alo
 :c:\nonroad\data\allocate\ct_sbr.alo
 :c:\nonroad\data\allocate\ct_snowm.alo
 :c:\nonroad\data\allocate\ct_wib.alo
 :c:\nonroad\data\allocate\ct_wob.alo

*** Growth Indicator Files ***

:c:\nonroad\data\growth\nation.grw

*** Scenario Specific Parameters ***

First Title line :2015 CT WINTER - TYPICAL WINTER WEEKDAY
 Second Title line :ASSUMES NO RFG (OXY WEIGHT = 0.0%)
 Fuel RVP (psi) : 13.90
 Fuel Oxygen weight %: 0.00
 Gasoline Sulfur % : 0.0339
 Diesel Sulfur % : 0.2318
 LPG/CNG Sulfur % : 0.0030
 Minimum Temperature : 19.90
 Maximum Temperature : 37.00
 Average Ambient Temp: 28.60
 Altitude of region :LOW
 Stage II Control % : 0.00

*** Period Parameters ***

Year of Inventory :2015
 Inventory for :SEASONAL period
 Emissions summed for:TYPICAL DAY
 Season :WINTER
 Day of week :WEEKDAY

*** Region of Interest ***

Region level : State-level estimates
 States of Interest :09000 - Connecticut

*** Equipment Types ***

All equipment types.

**** Number of Population Records Found ****

09000 Connecticut : 1054

Emission Totals by Source Classification and Pollutant

All Fuels

Tons/Day

The State of Connecticut

2015 CT Winter - Typical Winter Weekday

Assumes no RFG (Oxy weight = 0.0%)

Typical weekday for Winter Season, 2015

Date of Model Run: May 07 15:43:53: 2004

Today's Date: 5/7/2004

Source Classification	Exhaust VOC	Exhaust NOx	Exhaust CO	Exhaust PM2.5	Exhaust SOx	Exhaust CO2
Agricultural Equipment	0.02	0.15	0.24	0.02	0.03	19.48
Airport Equipment	0.01	0.08	0.14	0.01	0.02	13.58
Commercial Equipment	4.61	6.24	254.43	0.43	0.57	841.09
Construction and Mining Equipment	1.51	11.39	22.52	1.20	2.51	1,796.21
Industrial Equipment	3.93	22.14	82.34	0.58	1.01	1,693.61
Lawn and Garden Equipment (Com)	14.36	2.24	159.38	0.73	0.17	370.25
Lawn and Garden Equipment (Res)	3.52	0.42	46.10	0.12	0.02	85.01
Logging Equipment	0.01	0.01	0.17	0.00	0.00	2.18
Pleasure Craft	0.45	0.14	2.70	0.04	0.01	19.78
Railroad Equipment	0.03	0.13	0.44	0.02	0.02	14.76
Recreational Equipment	4.87	0.14	20.87	0.05	0.02	94.52
Totals:	33.31	43.07	589.31	3.17	4.39	4,950.47

Emission Totals by Source Classification and Pollutant

All Fuels

Tons/Day

The State of Connecticut

2015 CT Winter - Typical Winter Weekday

Assumes no RFG (Oxy weight = 0.0%)

Typical weekday for Winter Season, 2015

Date of Model Run: May 07 15:43:53: 2004

Today's Date: 5/7/2004

Source Classification	Crankcase VOC	Diurnal VOC	Vapor Displacement VOC	Spillage VOC	Total VOC
Agricultural Equipment	0.00	0.00	0.00	0.00	0.02
Airport Equipment	0.00	0.00	0.00	0.00	0.01
Commercial Equipment	0.13	0.16	0.15	0.31	5.36
Construction and Mining Equipment	0.04	0.01	0.01	0.00	1.58
Industrial Equipment	1.17	0.00	0.01	0.00	5.11
Lawn and Garden Equipment (Com)	0.05	0.08	0.11	1.34	15.94
Lawn and Garden Equipment (Res)	0.00	0.40	0.03	0.37	4.32
Logging Equipment	0.00	0.00	0.00	0.00	0.01
Pleasure Craft	0.00	2.23	0.01	0.00	2.70
Railroad Equipment	0.00	0.00	0.00	0.00	0.03
Recreational Equipment	0.00	0.08	0.04	0.05	5.04
Totals:	1.40	2.98	0.36	2.08	40.12

*** Output Files ***

Output data file :c:\nonroad\colmpr~1\lmp2020.out

*** Input Files ***

Options file :C:\NONROAD\COLMPR~1\LMP2020.OPT
Allocation XREF file:c:\nonroad\data\allocate\allocate.xrf
Activity file :c:\nonroad\data\activity\activity.dat
State/Regions file :c:\nonroad\data\season\season.dat
Seasonality file :c:\nonroad\data\season\season.dat
Tech fractions file :c:\nonroad\data\tech\tech.dat

*** Population Files ***

:c:\nonroad\data\pop\ct.pop

*** Emission Factors Files ***

BSFC file :c:\nonroad\data\emsfac\bsfc.emf
THC EXHAUST file :c:\nonroad\data\emsfac\exhthc.emf
CO EXHAUST file :c:\nonroad\data\emsfac\exhco.emf
NOX EXHAUST file :c:\nonroad\data\emsfac\exhnox.emf
CO2 EXHAUST file : Not Supplied.
SOX EXHAUST file : Not Supplied.
PM EXHAUST file :c:\nonroad\data\emsfac\exhpm.emf
CRANKCASE file :c:\nonroad\data\emsfac\crank.emf
HOT SOAKS file : Not Supplied.
DIURNAL file :c:\nonroad\data\emsfac\diurnal.emf
REFUELING file : Not Supplied.
SPILLAGE file :c:\nonroad\data\emsfac\spillage.emf
RUNINGLOSS file : Not Supplied.
RESTNGLOSS file : Not Supplied.

*** Deterioration Factors Files ***

THC EXHAUST file :c:\nonroad\data\detfac\exhthc.det
CO EXHAUST file :c:\nonroad\data\detfac\exhco.det
NOX EXHAUST file :c:\nonroad\data\detfac\exhnox.det
CO2 EXHAUST file : Not Supplied.
SOX EXHAUST file : Not Supplied.
PM EXHAUST file :c:\nonroad\data\detfac\exhpm.det
CRANKCASE file : Not Supplied.
HOT SOAKS file : Not Supplied.
DIURNAL file : Not Supplied.
REFUELING file : Not Supplied.
SPILLAGE file : Not Supplied.
RUNINGLOSS file : Not Supplied.
RESTNGLOSS file : Not Supplied.

*** Spatial Allocation Files ***

:c:\nonroad\data\allocate\ct_airtr.alo
:c:\nonroad\data\allocate\ct_coal.alo
:c:\nonroad\data\allocate\ct_const.alo
:c:\nonroad\data\allocate\ct_farms.alo
:c:\nonroad\data\allocate\ct_golf.alo
:c:\nonroad\data\allocate\ct_holsl.alo
:c:\nonroad\data\allocate\ct_house.alo
:c:\nonroad\data\allocate\ct_loggn.alo
:c:\nonroad\data\allocate\ct_lscap.alo
:c:\nonroad\data\allocate\ct_mnfg.alo
:c:\nonroad\data\allocate\ct_oil.alo
:c:\nonroad\data\allocate\ct_pop.alo
:c:\nonroad\data\allocate\ct_rvprk.alo
:c:\nonroad\data\allocate\ct_sbc.alo
:c:\nonroad\data\allocate\ct_sbr.alo
:c:\nonroad\data\allocate\ct_snowm.alo
:c:\nonroad\data\allocate\ct_wib.alo
:c:\nonroad\data\allocate\ct_wob.alo

*** Growth Indicator Files ***

:c:\nonroad\data\growth\nation.grw

*** Scenario Specific Parameters ***

First Title line :2020 CT WINTER - TYPICAL WINTER WEEKDAY
 Second Title line :ASSUMES NO RFG (OXY WEIGHT = 0.0%)
 Fuel RVP (psi) : 13.90
 Fuel Oxygen weight %: 0.00
 Gasoline Sulfur % : 0.0339
 Diesel Sulfur % : 0.2318
 LPG/CNG Sulfur % : 0.0030
 Minimum Temperature : 19.90
 Maximum Temperature : 37.00
 Average Ambient Temp: 28.60
 Altitude of region :LOW
 Stage II Control % : 0.00

*** Period Parameters ***

Year of Inventory :2020
 Inventory for :SEASONAL period
 Emissions summed for:TYPICAL DAY
 Season :WINTER
 Day of week :WEEKDAY

*** Region of Interest ***

Region level : State-level estimates
 States of Interest :09000 - Connecticut

*** Equipment Types ***

All equipment types.

**** Number of Population Records Found ****

09000 Connecticut : 1054

Emission Totals by Source Classification and Pollutant**All Fuels****Tons/Day****The State of Connecticut**

2020 CT WINTER - TYPICAL WINTER WEEKDAY

ASSUMES NO RFG (OXY WEIGHT = 0.0%)

Typical weekday for Winter Season, 2020

Date of Model Run: May 07 16:35:48: 2004

Today's Date: 5/7/2004

Source Classification	Exhaust VOC	Exhaust NOx	Exhaust CO	Exhaust PM2.5	Exhaust SOx	Exhaust CO2
Agricultural Equipment	0.01	0.14	0.25	0.01	0.03	21.04
Airport Equipment	0.01	0.08	0.14	0.01	0.02	15.42
Commercial Equipment	4.99	6.58	280.62	0.43	0.64	933.09
Construction and Mining Equipment	1.44	11.24	22.92	1.26	2.73	1,951.50
Industrial Equipment	4.10	23.73	83.66	0.63	1.10	1,830.01
Lawn and Garden Equipment (Com)	15.36	2.38	170.85	0.78	0.19	402.21
Lawn and Garden Equipment (Res)	3.76	0.45	49.43	0.12	0.02	91.13
Logging Equipment	0.01	0.01	0.19	0.00	0.00	2.10
Pleasure Craft	0.40	0.15	2.68	0.04	0.01	20.54
Railroad Equipment	0.02	0.12	0.44	0.02	0.02	16.30
Recreational Equipment	4.99	0.14	21.38	0.05	0.02	96.96
Totals:	35.09	45.03	632.56	3.35	4.79	5,380.28

Emission Totals by Source Classification and Pollutant

All Fuels

Tons/Day

The State of Connecticut

2020 CT WINTER - TYPICAL WINTER WEEKDAY

ASSUMES NO RFG (OXY WEIGHT = 0.0%)

Typical weekday for Winter Season, 2020

Date of Model Run: May 07 16:35:48: 2004

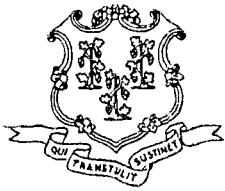
Today's Date: 5/7/2004

Source Classification	Crankcase VOC	Diurnal VOC	Vapor Displacement VOC	Spillage VOC	Total VOC
<hr/>					
Agricultural Equipment	0.00	0.00	0.00	0.00	0.02
Airport Equipment	0.00	0.00	0.00	0.00	0.01
Commercial Equipment	0.15	0.18	0.16	0.34	5.83
Construction and Mining Equipment	0.04	0.01	0.01	0.00	1.51
Industrial Equipment	1.24	0.00	0.00	0.00	5.34
Lawn and Garden Equipment (Com)	0.05	0.09	0.12	1.43	17.06
Lawn and Garden Equipment (Res)	0.00	0.43	0.03	0.40	4.62
Logging Equipment	0.00	0.00	0.00	0.00	0.01
Pleasure Craft	0.00	2.31	0.01	0.00	2.72
Railroad Equipment	0.00	0.00	0.00	0.00	0.02
Recreational Equipment	0.00	0.09	0.04	0.05	5.17
<hr/>					
Totals:	1.48	3.12	0.38	2.23	42.30

APPENDIX E

Public Hearing Materials

- **Notice of Hearing on SIP Revision**
- **Delegation of Hearing Officer**



STATE OF CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION



Notice of Intent to Revise the State Implementation Plan for Air Quality

The Commissioner of Environmental Protection hereby gives notice of a public hearing as part of a proceeding to revise the State Implementation Plan ("SIP") for air quality required by the Clean Air Act Amendments of 1990 (the "Act"). The public hearing will address a proposed revision to the SIP to request the U.S. Environmental Protection Agency's ("EPA's") approval for limited maintenance plans for three Connecticut carbon monoxide ("CO") attainment/maintenance areas: Hartford-New Britain-Middletown ("Hartford"); New Haven-Meriden-Waterbury ("New Haven"); and the Connecticut Portion of the New York-Northern New Jersey-Long Island ("Southwest Connecticut") area. This revision will be submitted to EPA for review and approval. This proposed revision is described in detail below.

All interested persons are invited to comment on the proposed revision. Comments should be submitted to the Department of Environmental Protection, Bureau of Air Management, Planning and Standards Division, 79 Elm Street, Hartford, Connecticut 06106-5127. All comments should be directed to the attention of Patricia Downes and must be received by 4:30 PM on June 17, 2004. Comments may be submitted by post, facsimile to (860) 424-4063 or by electronic mail to patricia.downes@po.state.ct.us.

Revision to State Implementation Plan to Request Approval for Limited Maintenance Plans ("LMPs") for the Hartford, the New Haven and the Connecticut Portion of the New York/New Jersey/Connecticut Carbon Monoxide Maintenance Areas: The purpose of this revision is to request approval for LMPs for the three Connecticut CO areas indicated above. These LMPs have been prepared based on a recommendation by EPA that adoption of such LMPs would be appropriate to replace the remainder of the first 10-year maintenance period for each of the three areas and to satisfy the requirement to submit a plan for the second 10-year maintenance period for each of the three areas. This revision is timely given the termination of the initial maintenance period for the Hartford CO area in 2005, the need to establish maintenance plans for the second 10-year period for each of the three areas and the significant decreases in ambient CO concentrations monitored throughout Connecticut.

In addition to accepting written comments, the Department of Environmental Protection will also hold the public hearing described below. Any person appearing at the hearing is requested to submit a written copy of his or her statement. However, oral comments will also be made a part of the hearing record and are welcome.

PUBLIC HEARING
June 17, 2004 at 2PM
Department of Environmental Protection, 5th Floor, Holcombe Room
79 Elm Street, Hartford, CT

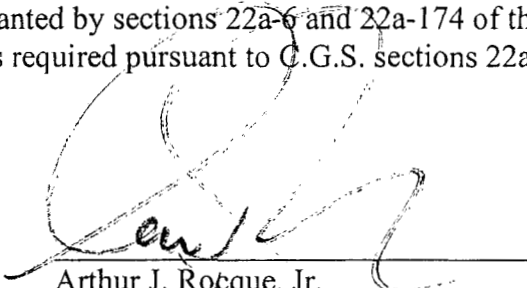
Copies of the revision described above are available for public inspection during normal business hours and may be obtained from Patricia Downes at the Connecticut Department of Environmental Protection, Bureau of Air Management, Planning and Standards Division, 5th

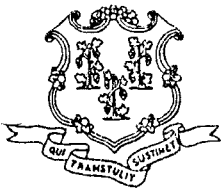
Floor, 79 Elm Street, Hartford, CT. Additional copies are also available for review at the Law Reference Desk at the Connecticut State Library, Torrington Public Library, New London Public Library and Bridgeport Public Library. For further information, contact Patricia Downes of the Bureau of Air Management at (860) 424-3027.

The Department of Environmental Protection supports the goals of the Americans with Disabilities Act of 1990. Any individual who needs auxiliary aids for effective communication during this public hearing or in submitting public comments should contact the Office of Affirmative Action at (860) 424-3035 or TDD (860) 424-3333 at least one week before the public hearing.

The authority to adopt this revision is granted by sections 22a-6 and 22a-174 of the Connecticut General Statutes (C.G.S.). This notice is required pursuant to C.G.S. sections 22a-6 and 40 C.F.R. section 51.102.

5/10/04
Date


Arthur J. Rotque, Jr.
Commissioner



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

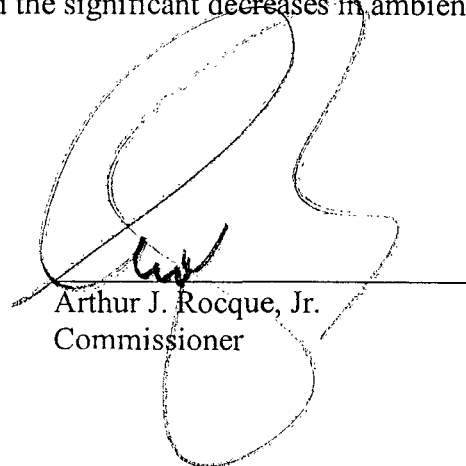


DELEGATION OF HEARING OFFICER

In accordance with the provisions of section 22a-2 of the Connecticut General Statutes, Merrily A. Gere of the Bureau of Air Management is hereby appointed as Hearing Officer. The purpose of this delegation is to allow said Officer to conduct a hearing on June 17, 2004 and to render a proposed decision regarding a proposed revision of the State Implementation Plan ("SIP") for air quality required by the Clean Air Act Amendments of 1990 ("CAA"). This SIP revision will be submitted to the U.S. Environmental Protection Agency ("EPA") for review and approval pursuant to CAA.

This revision consists of the documentation to request approval for limited maintenance plans ("LMPs") for three Connecticut carbon monoxide ("CO") attainment/maintenance areas: Hartford-New Britain-Middletown ("Hartford"); New Haven-Meriden-Waterbury; and the Connecticut Portion of the New York-Northern New Jersey-Long Island area. These LMPs have been prepared based on a recommendation by EPA that adoption of such LMPs would be appropriate to replace the remainder of the first 10-year maintenance period for each of the three areas and to satisfy the requirement to submit a plan for the second 10-year maintenance period for each of the three areas. This revision is timely given the termination of the initial maintenance period for the Hartford CO area in 2005, the need to establish maintenance plans for the second 10-year period for each of the three areas and the significant decreases in ambient CO concentrations monitored throughout Connecticut.

5/10/04
Date



Arthur J. Rocque, Jr.
Commissioner